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REMARKS

Claims 1-27 are pending in the present application. Claims 1 and 18 have been amended.

No new matter has been added.

The specification has been amended herein to correct typographical errors in paragraph 28. Entry of these amendments is respectfully requested.

Claims 1-4, 7, 9, 14, and 16-17 are rejected under 35 U.S.C. § 102(e) as being anticipated by Lee (U.S. Patent No. 6,759,335, hereinafter "Lee"). This rejection is hereby respectfully traversed.

Claim 1 has been amended herein to further clarify and distinctly claim the embodiments recited. As amended, claim 1 requires, *inter alia*:

"...forming a vertical silicon layer along the sidewalls of the trench to continuously cover at least a portion of the sidewalls, the vertical silicon layer laying conformally along the vertical sidewalls of the trench and having exposed vertical interior surfaces; the silicon layer not having a continuous crystalline structure; and performing gas phase doping upon the exposed vertical interior surfaces of the vertical silicon layer..."

Applicant respectfully submits that the recited claim elements are not disclosed by Lee. Lee teaches forming a polysilicon layer 62 that is primarily horizontally placed over a plug within a trench. The Examiner cites Lee for the small portion of the layer 62 that lies adjacent the sidewalls of the trench. As amended, claim 1 recites particular features of the claimed embodiment that are clearly not disclosed by Lee, particularly steps quoted above. Accordingly, Applicant submits that claim 1 is neither anticipated by the reference nor obvious over the reference and is therefore allowable. Reconsideration and allowance are respectfully requested.

Claims 2-4, 7, 9, 14 and 16-17 depend from and recite additional method steps on the method of independent claim 1. As each of these method steps incorporate the allowable method steps of claim 1, each is also allowable over the reference and the rejection. Reconsideration and allowance are therefore respectfully requested.

Claims 5-6, 8, 10-13 and 18-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of Chung et al. (U.S. Patent No. 6,734,106, hereinafter "Chung"). This rejection is also hereby respectfully traversed.

With respect to method claims 5-6, 8 and 10-13, the combination of Lee and Chung is recited for providing particular method steps of these dependent claims. However as the parent claim, claim 1, now recites allowable steps over Lee, and because the combination of references relied upon by the Examiner also does not provide these steps, each of these dependent claims is also believed to be allowable. Reconsideration and allowance are therefore respectfully requested.

Independent claim 18 is another method claim which is amended herein to recite steps of forming a silicon layer along a vertical sidewall in a manner similar to the amendments made to claim 1. Applicant therefore again respectfully submits that as amended, this method claim recites steps not disclosed by either Lee, Chung, or the combination of these references proposed by the Examiner. Accordingly reconsideration and allowance are requested for claim 18.

Dependent claims 19-24 recite additional detailed method steps on the method of claim 18 and incorporate the allowable method of claim 18 and are therefore also believed to be allowable. Reconsideration and allowance are therefore respectfully requested.

Claim 15 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of Cheong (U.S. Publication No. 2003/0186533, hereinafter "Cheong"). This rejection is also respectfully traversed.

Claim 15 is a dependent claim depending from claim 1 which adds the method of doping "ex situ" to the method of claim 1. Applicant respectfully submits that while the Cheong reference may teach the particular step recited in claim 15, the combination does not recite the allowable method steps of claim 1, which are incorporated in to dependent claim 15. Accordingly, reconsideration and allowance are respectfully requested for claim 15.

Claims 25-27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of Chung as applied to claim 18 above, and further in view of Cheong. This rejection is also respectfully traversed.

Claims 25-27 depend from and add additional limitations on the method of claim 18. As claim 25 recites "ex situ" doping, the Examiner has again added Cheong to the combination of Lee and Chung.

Applicant respectfully submits that the allowable method steps of claim 18, the parent claim, are incorporated into claims 25-27, and while detailed steps of some of these claims may be individually shown by Chung or Cheong, the combination of the three references together still does not disclose the methods now recited by claims 25-27, even if the proposed combination were made. Accordingly, reconsideration and allowance of these dependent claims is likewise respectfully requested.

In view of the above, Applicant respectfully submits that this response complies with 37 C.F.R. § 1.116. Applicant further submits that the claims are in condition for allowance. No new matter has been added by this amendment. If the Examiner should have any questions, please contact Applicant's attorney at the number listed below. No fee is believed due in connection with this filing. However, in the event that there are any fees due, please charge the same, or credit any overpayment, to Deposit Account No. 50-1065.

Respectfully submitted,

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Date

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